SPECIAL STATUS SPECIES CONSIDERATIONS FOR THE COLORADO LAGOON RESTORATION FEASIBILITY STUDY FOR THE CITY OF LONG BEACH

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I. EXECUTIVE SUMMARY

This report discusses the potential for special status plants and animals to occur at Colorado Lagoon. The City of Long Beach is developing a plan to improve water quality and restore habitat in Colorado Lagoon. The purpose of this special status species analysis is to identify any potential impacts to special status species that could be a constraint to restoration activities at the lagoon and identify potential opportunities to enhance Colorado Lagoon for special status species. A summary of the survey results appears below.

A literature review resulted in 16 sensitive plant species that have a potential to occur in or within the vicinity of Colorado Lagoon. Five sensitive plant species are federal- and state-listed endangered or threatened species, Ventura marsh milk-vetch (*Astragalus pycnostachyus* var. *lanosissimus*), salt marsh bird's-beak (*Cordylanthus maritimus* ssp. *maritimus*), California Orcutt grass (*Orcuttia californica*), Lyon's pentachaeta (*Pentachaeta lyonii*), and Gambel's water cress (*Rorippa gambelii*). None of the sensitive plant species were observed during the survey and none are expected to occur.

A literature review resulted in 12 sensitive wildlife species that have a potential to occur in or within the vicinity of Colorado Lagoon. Five sensitive wildlife species are federal- and state-listed endangered or threatened species, California brown pelican (*Pelecanus occidentalis californicus*), American peregrine falcon (*Falco peregrinus anatum*), Western snowy plover (*Charadrius alexandrinus nivosus*), California least tern (*Sterna antillarum browni*), and Belding's savannah sparrow (*Passerculus sandwichensis beldingi*). Although none of the sensitive wildlife species were observed during the survey, several have a high to moderate potential to occur within the project site.

No sensitive plant species occur at Colorado Lagoon. There is no potential for activities related to the restoration of the lagoon to disturb special status plants.

Several special status bird species occur or potentially occur at Colorado Lagoon. There is a potential for activities related to the restoration of the lagoon to disturb sensitive bird species using the area. Activities associated with lagoon restoration potentially could temporarily disturb birds using the lagoon. For most of the special status bird species that could occur in the lagoon, temporary disturbance of a small portion of their foraging habitat would not be a significant impact. However, depending on the extent of the disturbance, temporary loss of foraging habitat by the state and federal endangered California least tern could be a significant impact. Least terns use quiet areas such as Colorado Lagoon to train their young to forage after the chicks have fledged. Therefore, mitigation measures, such as performing activities such as dredging outside the nesting season of the least tern, may be necessary to protect this species. The City of Long Beach should consult with the U.S. Fish and Wildlife Service regarding potential impacts to least terns, once a restoration plan has been identified.

There is a potential to enhance native habitat of special status species at Colorado Lagoon. Although the setting is constrained by a high level of human-related disturbance, improvement in water quality and restoration of salt marsh habitat will improve the overall habitat quality for special status species that use the area. Potential measures include establishing special status plants, establishing nesting habitat for California least terns, western snowy plovers, Belding's savannah sparrow, and osprey, and protecting existing and future habitat from human intrusion.

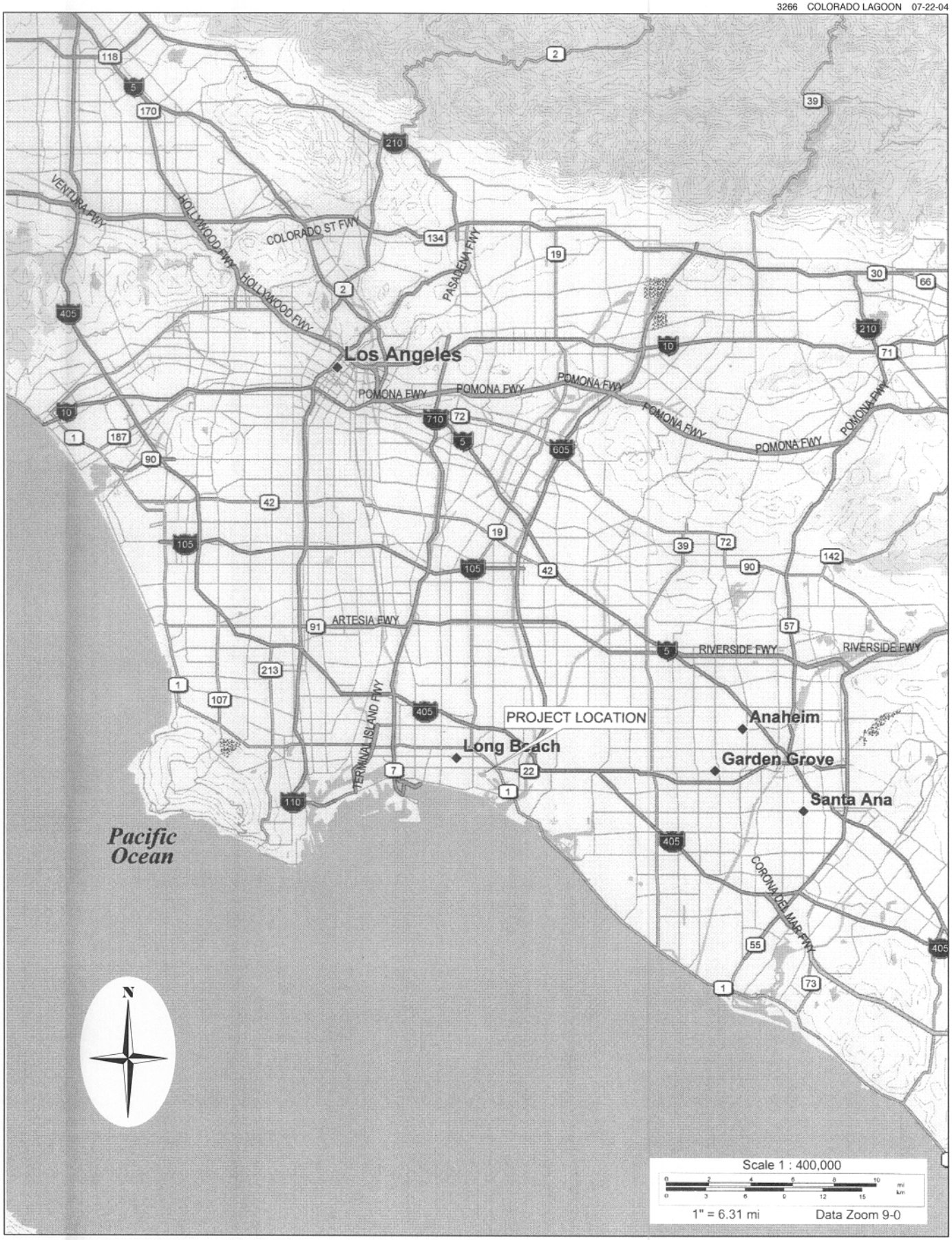
SECTION 1.0 – INTRODUCTION

This report discusses the potential for special status plants and animals to occur at Colorado Lagoon. The City of Long Beach is developing a plan to improve water quality and restore habitat in Colorado Lagoon. The purpose of this special status species analysis is to identify any potential impacts to special status species that could be a constraint to restoration activities at the lagoon and to identify potential opportunities to enhance Colorado Lagoon for special status species.

Colorado Lagoon is a tidally influenced, Y-shaped body of water forming the uppermost, northwestern portion of Alamitos Bay. Figure 1 shows the location of Colorado Lagoon. Colorado Lagoon is connected to Marine Stadium and the rest of Alamitos Bay by tide gates and an underground waterway. These restrictions to water movement mute the tides so that the tidal range in Colorado Lagoon is less than that of Marine Stadium.

Colorado Lagoon forms the centerpiece of a recreational area that supports a variety of public uses including, swimming, picnicking, fishing, bird watching, and dog walking. Although it is developed as a recreational area with landscaping and imported sand, the edges of the lagoon support saltmarsh habitat and the lagoon waters provide habitat for estuarine fishes and invertebrates as well as a variety of water-associated birds.

Section 2.0 describes special status plants that potentially could occur at Colorado Lagoon and Section 3.0 describes the potential for occurrence of special status animals. Section 4.0 identifies restoration constraints related to special status species. Section 4.0 identifies opportunities to enhance Colorado Lagoon for special status species.



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PROJECT LOCATION MAP
COLORADO LAGOON
Figure 1

SECTION 2.0 – SPECIAL STATUS PLANTS

2.1 POTENTIAL FOR OCCURRENCE OF SENSITIVE PLANTS

The California Natural Diversity Database (CNDDB) and the California Native Plant Society (CNPS) list of sensitive plant occurrences were consulted to identify sensitive plant species with the potential to occur at Colorado Lagoon. A plant survey was conducted over the Colorado Lagoon project site by Chambers Group botanist Ken McDonald on July 1, 2004. The protocol used during the survey consisted of walking meandering transects throughout all areas of the site. The project site had generally even topography. All areas of the site were visited.

The literature review resulted in a list of 16 sensitive plant species that have the potential to occur on or within the vicinity of Colorado Lagoon. Five sensitive plant species are federal- and state-listed endangered or threatened species. None of the following sensitive plant species were observed during the reconnaissance survey. The current status of each of the sensitive species is summarized in Table 1. Because the whole site was surveyed during the flowering season, it is reasonably certain that no special status plant species currently occur at Colorado Lagoon.

Table 1
Sensitive Plant Species Potentially Occurring Within the Colorado Lagoon Site

Special Status Species	Habitat and Distribution	Flower Season	Status Designation	Presence/ Absence
Astragalus pycnostachyus* var. *lanosissimus Ventura marsh milk-vetch	Perennial herb. Occurs in coastal dunes and edges of coastal salt marshes and swamps. Up to 115 feet in elevation.	June – October	Fed: **END** CA: **END** CNPS: List 1B R-E-D: 3-3-3	Absent.
Atriplex parishii Parish's brittlescale	Annual herb. Occurs in chenopod scrub, vernal pools, and playas, usually, on drying alkali flay with fine soils. From 10 to 6,230 feet in elevation.	June – October	Fed: None CA: None CNPS: List 1B R-E-D: 3-3-2	Absent.
Atriplex serenana* var. *davidsonii Davidson's saltscale	Annual herb. Occurs in coastal bluff scrub and coastal scrub on alkaline soils. From 10 to 820 feet in elevation.	April – October	Fed: None CA: None CNPS: List 1B R-E-D: 3-2-2	Absent.
Calystegia sepium* ssp. *binghamiae Santa Barbara morning-glory	Rhizomatous perennial herb. Occurs in coastal marshes and swamps. Up to 100 feet in elevation.	April – May	Fed: None CA: None CNPS: List 1A R-E-D: *	Absent.
Centromadia parryi* ssp. *australis southern tarplant	Annual herb. Occurs in vernal pools, margins of marshes and swamps, and vernally mesic valley and foothill grasslands, sometimes with saltgrass on alkaline soils. Up to 1,400 feet in elevation.	May – November	Fed: None CA: None CNPS: List 1B R-E-D: 3-3-2	Absent.

Table 1 (continued)
Sensitive Plant Species Potentially Occurring Within the Colorado Lagoon Site

Special Status Species	Habitat and Distribution	Flower Season	Status Designation	Presence/ Absence
Cordylanthus maritimus* ssp. *maritimus salt marsh bird's-beak	Hemiparasitic annual herb. Occurs in coastal dunes and coastal salt marshes and swamps. Up to 100 feet in elevation.	May – October	Fed: **END** CA: **END** CNPS: List 1B R-E-D: 2-2-2	Absent.
Lasthenia glabrata* ssp. *coulteri Coulter's goldfields	Annual herb. Occurs in coastal salt marshes and swamps, valley and foothill grasslands, playas, sinks, and vernal pools. Up to 4,000 feet in elevation.	February – June	Fed: None CA: None CNPS: List 1B R-E-D: 2-3-2	Absent.
Nama stenocarpum mud nama	Annual to perennial herb. Occurs in marshes and swamps, and along lake margins and riverbanks. From 15 to 1,640 feet in elevation.	January – July	Fed: None CA: None CNPS: List 2 R-E-D: 3-2-1	Absent.
Navarretia prostrata prostrate navarretia	Annual herb. Occurs in coastal scrub, vernal pools, and valley and foothill grasslands in mesic soils. From 50 to 2,300 feet in elevation.	April – July	Fed: None CA: None CNPS: List 1B R-E-D: 2-3-3	Absent.
Nemacaulis denudata* var. *denudata coast woolly-heads	Annual herb. Occurs in coastal dunes. Up to 330 feet in elevation.	April – September	Fed: None CA: None CNPS: List 1B R-E-D: 2-2-2	Absent.
Orcuttia californica California Orcutt grass	Annual herb. Occurs in vernal pools. From 50 to 2,165 feet in elevation.	April – August	Fed: **END** CA: **END** CNPS: List 1B R-E-D: 3-3-2	Absent.
Pentachaeta lyonii Lyon's pentachaeta	Annual herb. Occurs in coastal scrub, chaparral, and valley and foothill grassland. From 100 to 2,070 feet in elevation.	March – August	Fed: **END** CA: **END** CNPS: List 1B R-E-D: 3-3-3	Absent.
Rorippa gambelii Gambel's water cress	Rhizomatous perennial herb. Occurs in freshwater or brackish marshes and swamps. From 15 to 1,085 feet in elevation.	April – September	Fed: **END** CA: **THR** CNPS: List 1B R-E-D: 3-3-2	Absent.
Sagittaria sanfordii Sanford's arrowhead	Rhizomatous perennial herb. Occurs in shallow freshwater swamps and marshes. Up to 2,000 feet in elevation.	May – October	Fed: None CA: None CNPS: List 1B R-E-D: 2-2-3	Absent.

Table 1 (continued)
Sensitive Plant Species Potentially Occurring Within the Colorado Lagoon Site

Special Status Species	Habitat and Distribution	Flower Season	Status Designation	Presence/ Absence
Sidalcea neomexicana salt spring checkerbloom	Perennial herb. Occurs in coastal scrub, chaparral, lower montane coniferous forest, brackish marshes, mohavean desert scrub, and playas on alkaline, mesic soils. Up to 5,020 feet in elevation.	March – June	Fed: None CA: None CNPS: List 2 R-E-D: 2-2-1	Absent.
Suaeda esteroa estuary seablite	Perennial herb. Occurs in coastal salt marshes and swamps. Up to 15 feet in elevation.	May – October	Fed: None CA: None CNPS: List 1B R-E-D: 2-2-2	Absent.
General references: Hickman (ed.) 1993; CNPSEI 2004; CNDDB 2004.				
***Federal designations*: (federal Endangered Species Act, USFWS):** **END: Federally listed, endangered.** **CAN: Proposed federal listed, endangered.** **THR: Federally listed, threatened.**				
***State designations*: (California Endangered Species Act, CDFG)** **END: State-listed, endangered.** **THR: State-listed, threatened.** **RARE: State-listed as rare.** **MSHCP= A species identified within the Draft Western Riverside County Multiple Species Habitat Conservation Plan, which focuses on the conservation of species and their associated habitats in Western Riverside County and is one of several large, multi-jurisdictional planning efforts in Southern California.**				
***California Native Plant Society (CNPS) designations*:** **List 1A: Plants presumed extinct in California.** **List 1B: Plants rare and endangered in California and throughout their range.** **List 2: Plants rare, threatened or endangered in California but more common elsewhere in their range.** **List 3: Plants about which we need more information; a review list.** **List 4: Plants of limited distribution; a watch list.**				
CNPS R-E-D Code: ***Rarity:*** **1: Rare, but found in sufficient numbers and distributed widely enough that the potential for extinction or extirpation is low at this time.** **2: Occurrence confined to several populations or one extended population.** **3: Occurrence limited to one or a few highly restricted populations, or present in such small numbers that it is seldom reported.** ***Endangerment:*** **1: Not endangered.** **2: Endangered in a portion of its range.** **3: Endangered throughout its range.** ***Distribution:*** **1: More or less widespread outside California.** **2: Rare outside California.** **3: Endemic to California (i.e., does not occur outside California).**				

2.2 SPECIAL STATUS PLANT SPECIES DESCRIPTIONS

This section provides a brief description of the biology of the five sensitive plant species that are federally and state-listed endangered, threatened, or candidate species.

Ventura marsh milk-vetch (*Astragalus pycnostachyus* var. *lanosissimus*) is a federally and state listed as **endangered** species, with a CNPS listing of 1B. This perennial herb blooms from June to October,

and occurs in coastal dunes and edges of coastal salt marshes and swamps up to 115 feet in elevation. Appropriate habitat was present in the coastal brackish marsh, but Ventura marsh milk-vetch was not observed during the focused survey and is considered absent from the site.

Salt marsh bird's-beak (*Cordylanthus maritimus* ssp. *maritimus*) is a federally- and state-listed as **endangered** species, with a CNPS listing of 1B that blooms from May to October. It occurs in coastal salt marsh, coastal dunes, and alkaline meadows. Although it is usually found up to 100 feet in elevation, it has been observed as high as 1000 feet in elevation. Appropriate habitat was present in the coastal brackish marsh, but Salt marsh bird's-beak was not observed during the focused survey and is considered absent from the site.

California Orcutt grass (*Orcuttia Californica*) is a federally- and state-listed as **endangered** species with a CNPS listing of 1B. This annual herb blooms from April to August and occurs in vernal pool habitats from 50 to 2,165 feet in elevation. No appropriate habitat was present on the project site, and California Orcutt grass was not observed during the focused survey and is considered absent from the site.

Lyon's pentachaeta (*Pentachaeta lyonii*) is a federally- and state-listed as **endangered** species with a CNPS listing of 1B. This annual herb blooms from March to August, and occurs in coastal scrub, chaparral, and valley and foothill grassland. Lyon's pentachaeta is frequently found at the ecotone between grasslands and chaparral habitats or along the edges of firebreaks in these plant communities, from 100 to 2,070 feet in elevation. Appropriate habitat was present in the coastal brackish marsh, but Lyon's pentachaeta was not observed during the focused survey and is considered absent from the site.

Gambel's water cress (*Rorippa gambelii*) is federal-listed as **endangered** and state-listed as **threatened**, with a CNPS listing of 1B. This rhizomatous perennial herb occurs in freshwater or brackish marshes and swamps from 15 to 1,080 feet in elevation. Appropriate habitat was present in the coastal brackish marsh, but Gambel's water cress was not observed during the focused survey and is considered absent from the site.

SECTION 3.0 – SPECIAL STATUS ANIMALS

3.1 POTENTIAL FOR OCCURRENCE OF SENSITIVE WILDLIFE

Prior to performing the field survey, existing documentation relevant to the project site was reviewed. The most recent records of the CNDDB were reviewed for the quadrangles containing and surrounding the project site (i.e., Long Beach, Los Alamitos, and Seal Beach USGS 7.5 minute quadrangles) to develop a list of sensitive wildlife potentially occurring within the project site. These databases contain records of reported occurrences of federal- or state-listed endangered or threatened or proposed endangered or threatened species, former Federal Species of Concern (FSC), California Species of Special Concern, (CSC), or otherwise sensitive species of habitat that may occur within or in the immediate vicinity of the project site.

Table 2 lists sensitive animal species that have the potential to occur in the Colorado Lagoon project area. Five species listed as threatened or endangered by either the federal or state government have the potential to occur at Colorado Lagoon. Each of these is discussed in detail below. In addition, a number of California Species of Special Concern have the potential to occur in the project area. These are discussed briefly at the end of this section.

Table 2
Sensitive Wildlife Species Potentially Occurring
At Colorado Lagoon

Scientific Name	Common Name	Status[1]	Potential for Occurrence[2]
PHYLUM VERTEBRATA	**BACKBONED ANIMALS**		
CLASS AVES	**BIRDS**		
GAVIIDAE	**LOONS**		
Gavia immer	common loon	CSC	H
PELECANIDAE	**PELICANS**		
Pelecanus occidentalis californicus	California brown pelican	SE,FE	H
PHALACROCORACIDAE	**CORMORANTS**		
Phalacrocorax auritus	double-crested cormorant	CSC	H
ARDEIDAE	**HERONS, BITTERNS**		
Ixobrychus exilis hesperis	Western least bittern	CSC	L
ACCIPITRIDAE	**HAWKS,KITES,HARRIERS, AND EAGLES**		
Accipiter cooperi	Coopers hawk	CSC	M
Pandion haliaetus	Osprey	CSC	H
FALCONIDAE	**FALCONS, CARACARAS**		
Falco peregrinus anatum	American peregrine falcon	SE	M
CHARADRIIDAE	**PLOVERS**		
Charadrius alexandrinus nivosus	Western snowy plover	FT, CSC	M
SCOLOPACIDAE	**SANDPIPERS, PHALAROPES**		
Numenius americanus	Long-billed curlew	CSC	M
LARIDAE	**GULLS, TERNS, AND SKIMMERS**		
Larus californicus	California gull	CSC	H
Sterna antillarum browni	California least tern	FE, SE	H
Rynchops niger	black skimmer	CSC	M
ALCIDAE	**AUKS**		
Cerorhinca monocerata	rhinoceros auklet	CSC	L
LANIIDAE	**SHRIKES**		
Lanius ludovicianus	loggerhead shrike	CSC	M

Table 2 (continued)
Sensitive Wildlife Species Potentially Occurring
At Colorado Lagoon

Scientific Name	Common Name	Status[1]	Potential for Occurrence[2]
EMBERIZIDAE	**EMBERIZIDS**		
Geothlypis trichas sinuosa	saltmarsh common yellowthroat	CSC	L
Passerculus sandwichensis beldingi	Belding's savannah sparrow	SE	M

1 Status

FT = Listed as a Threatened Species by the Federal Government

FE = Listed as an Endangered Species by the Federal Government

CSC = California Department of Fish and Game Species of Special Concern

SE = Listed as an Endangered Species in the State of California

2 Potential for Species to Occur Onsite

L = Low potential to occur within the project site

M = Moderate potential to occur within the project site

H = High potential to occur within the project site

California Least Tern (Federal Endangered, State Endangered). California least terns (*Sterna antillarum browni*) nest on sandy beaches and forage for small fish in bays, lagoons, and along the open coast. This species has become endangered primarily because of human disturbance to its sandy beach nesting habitat. Least terns are present in southern California during their breeding season between April and September. They winter in South America. Least terns begin to arrive in mid-April and nest in May (Keane 1987). Nesting usually concludes by mid-August, with non-breeding groups still present in southern California as late as September.

Least terns do not nest at Colorado Lagoon. The nearest least tern nesting site is at Seal Beach Naval Weapons Station in Anaheim Bay approximately 3 miles from Colorado Lagoon. Least terns also nest in the Port of Los Angeles. Least terns forage on small fish in Colorado Lagoon.

California Brown Pelican (Federal Endangered, State Endangered). The California brown pelican (*Pelecanus occidentalis californicus*) was originally listed as endangered because of its low reproductive success, attributed to the production of thin-shelled eggs as a consequence of pesticide contamination. Use of DDT was prohibited in 1970, and it appears that the brown pelican population has largely recovered (State Lands Commission 1987).

California brown pelicans forage along the coast of California all year, but in smaller numbers during the breeding season (approximately January through June). All breeding occurs on the California Channel Islands and islands off the coast of Mexico. While over 100,000 pairs are known to breed in Mexico and the Gulf of California, fewer than 7,000 pairs breed in California at colonies located on Anacapa and Santa Barbara Islands (USACE and LAHD 1992, Gress 1994).

California brown pelicans eat northern anchovies and other small fishes. Brown pelicans do not breed on the mainland but are common in coastal waters. They are frequent inhabitants of southern California harbors and estuaries and often are seen at Colorado Lagoon.

Western Snowy Plover (Federal Threatened, State Species of Special Concern). Western snowy plovers (*Charadrius alexandrinus nivosus*) nest on sandy beaches on marine and estuarine shores between March and September. During the fall and winter, breeding snowy plovers disperse from their breeding grounds, and wintering snowy plovers may be found in southern California coastal areas. Populations have declined statewide in recent years, primarily due to human disturbance of sandy beach habitat. Snowy plovers forage for invertebrates near the water's edge.

Snowy plovers breed in the Bolsa Chica wetlands approximately 5 miles from Colorado Lagoon. Snowy plovers have not been observed at Colorado Lagoon in recent bird surveys, but they potentially could occur there particularly during the winter when they are dispersed from their breeding areas.

American Peregrine Falcon (State Endangered). Population declines of the peregrine falcon (*Falco peregrinus anatum*) occurred primarily because of pesticide contamination, specifically DDT. Peregrines are recovering over much of their former range due to a ban on DDT beginning in the early 1970s and captive breeding and reintroduction programs. The peregrine falcon was delisted by the federal government in 1999. Prey of peregrines is almost exclusively birds.

Peregrine falcons breed in the vicinity of Los Angeles and Long Beach Harbors. Peregrines tend to concentrate their foraging in areas such as tidal mudflats where large numbers of shorebirds occur. Urban peregrines may feed largely on rock doves (Ratcliffe 1993). Peregrine falcons have not been recorded at Colorado Lagoon in recent bird surveys, but they potentially could forage there.

Belding's Savannah Sparrow (State Endangered, Federal Species of Concern). The savannah sparrow is a widespread species of North American open habitats. Belding's savannah sparrow (*Passerculus sandwichensis beldingi*) is a subspecies whose distribution is limited to saltmarsh habitats of southern California and northern Baja California. This species breeds in pickleweed (*Salicornia* sp.) (Zembal et al. 1988) but may forage in other habitats. Beldings savannah sparrows do not breed in Colorado Lagoon. The nearest breeding area is Anaheim Bay approximately 3 miles from Colorado Lagoon. Beldings savannah sparrows potentially could forage at Colorado Lagoon especially during the non-breeding season.

Other Sensitive Animal Species

Several bird species designated as California Species of Special Concern have the potential to occur in Colorado Lagoon. California Species of Special Concern do not have legal status, but are species that have been identified as potentially vulnerable to extinction because of population declines, limited range or continuing threats. The goal of designating Species of Special Concern is to reverse or halt their decline by addressing the issues of concern early enough to secure their long-term viability (CDFG 2003).

Three California Species of Special Concern have been observed at Colorado Lagoon in recent bird surveys. These include double-crested cormorant (*Phalacrocorax auritus*), California gull (*Larus californicus*), and osprey (*Pandion haliaetus*). None of these species breeds at Colorado Lagoon. In southern California, double-crested cormorants breed primarily on the Channel Islands although there are some mainland breeding colonies including Anaheim Lakes in Orange County (Gallagher 1997). Double-crested cormorants are frequent visitors to Colorado Lagoon where they feed on small fishes and rest on the water. California gulls primarily breed at Mono Lake, but they are common at Colorado Lagoon particularly during the non-breeding season. Ospreys are fish-eating hawks that nest on platforms of sticks on the tops of snags, cliffs or man-made structures. They have been observed foraging for fish in Colorado Lagoon.

Six other California Species of Special Concern have not been observed in recent bird surveys of Colorado Lagoon but have a moderate to high probability of occurring there. These species are common loon (*Gavia immer*), Coopers hawk (*Accipiter cooperi*), long-billed curlew (*Numenius americanus*), black skimmer (*Rynchops niger)* and loggerhead shrike (*Lanius ludovicianus*). None of these species would be expected to nest at Colorado Lagoon but they might forage there or pass through during migration.

Common loons typically breed in more northern latitudes but winter regularly offshore and in coastal estuaries of southern California. Coopers hawks nest in woodland areas and forage on small birds. They are not uncommon in urban areas and might, at times, forage in the vicinity of Colorado Lagoon. Long-billed curlews breed in northern California but are common in southern California estuaries during the winter. Black skimmers are large, fish-eating terns. They nest in several southern California bays and estuaries including Bolsa Chica and Upper Newport Bay. They potentially could forage on the large numbers of water column fish in Colorado Lagoon. Loggerhead shrikes are a common resident and winter visitor in lowlands and foothills throughout California. They frequent open habitats with sparse shrubs and trees. They are frequently seen in urban areas.

Three other species, rhinoceros auklet (*Cerorhinca monocerata*), Western least bittern (*Ixobrychus exilis hesperis*) and saltmarsh common yellowthroat (*Geothlypis trichas sinuosa*), have a low potential to occur in Colorodo Lagoon. Rhinoceros auklets are seabirds associated with the open ocean. They are reported sporadically from the Los Angels-Long Beach Harbor complex but would be unlikely to occur as far inland as Colorado Lagoon. Western least bitterns are secretive wading birds usually associated with dense growths of emergent vegetation. The lack of this habitat at Colorado Lagoon makes the occurrence of this species unlikely. The saltmarsh common yellowthroat nests in the San Francisco Bay region and winters southward in coastal wetlands. It is indistinguishable in the field from other subspecies of common yellowthroat. The sparseness of the saltmarsh vegetation at Colorado Lagoon make the presence of this subspecies unlikely.

SECTION 4.0 – PROJECT CONSTRAINTS RELATED TO SPECIAL STATUS SPECIES

No sensitive plant species occur at Colorado Lagoon. Therefore, there is no potential for activities involved in Colorado Lagoon restoration to disturb special status plants.

A number of special status bird species occur or potentially occur in Colorado Lagoon. Activities associated with lagoon restoration potentially could temporarily disturb birds using the lagoon. For most of the special status bird species that could occur in the lagoon, temporary disturbance of a small portion of their foraging habitat would not be a significant impact. However, depending on the extent of the disturbance, temporary loss of foraging habitat by the state and federal endangered California least tern could be a significant impact. Least terns use quiet areas such as Colorado Lagoon to train their young to forage after the chicks have fledged. Therefore, mitigation measures, such as performing activities such as dredging outside the least tern nesting season, may be necessary to protect this species. The City of Long Beach should consult with the U.S. Fish and Wildlife Service regarding potential impacts to least terns, once a restoration plan has been identified.

SECTION 5.0 – POTENTIAL OPPORTUNITIES TO ENHANCE COLORADO LAGOON FOR SPECIAL STATUS SPECIES

Because Colorado Lagoon is a small area in an urban setting, opportunities to provide habitat for special status species are constrained by the fact that the area always will be subject to a high level of human-related disturbance. However, improvement in water quality and restoration of salt marsh habitat will improve the overall habitat quality for special status species that use the area. This section identifies some specific measures that potentially could improve use of Colorado Lagoon for special status species. These measures have not been evaluated yet for feasibility or whether they conflict with other goals and uses of the area. The examination of the tidal culvert connection, to improve circulation and water quality and thus improve habitat, will be evaluated as part of the hydrology report and in future deliverables.

Special Status Plants. Special status plants, such as salt marsh bird's beak, associated with salt marsh habitat, could be planted in restored marsh habitat. Because of high human use of the area, fencing and signs should be installed to protect any places where sensitive plants have been established.

Special Status Birds. There may be potential to establish nesting habitat for California least terns, western snowy plovers, Belding's savannah sparrow, and osprey. However, establishment of nesting habitat is problematical because of the high human use of the lagoon and the presence of predators (dogs, cats, raccoons, skunks, and possibly red fox and coyotes). The safest way to provide nesting areas would be on one or more islands in the center of the lagoon. A sandy nesting area for snowy plovers and least terns could be created within the lagoon. Nesting islands provide protection from mammalian predators and human disturbance. However, construction of a nesting island would reduce the tidal prism of the lagoon and might conflict with measures to improve water quality.

A nesting platform could be constructed in the center of the lagoon for osprey. However, high human use of the area might discourage this species from nesting in the lagoon.

There might be some potential to establish Beldings savannah sparrow breeding habitat if pickleweed marsh around the edges of the lagoon was expanded and enhanced in quality. However, it would be very difficult to protect the sparrow nests from mammalian predators.

The beach on the north shore of the center portion of the lagoon has the potential to be enhanced as an intertidal foraging area for shorebirds including western snowy plover and long-billed curlew. The area could be enhanced for shorebird foraging by increasing the amount of intertidal habitat either by improving the tidal range or by grading the beach to a gentler slope. The area could be protected from human intrusion by fencing. Signs and overlooks could be installed to educate the public about shorebirds.

SECTION 6.0 – REFERENCES

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